# 3.3 - Decision Making and Patterns

| Curriculum Outcomes | Related Activities | Page in Text |
|---|---|---|
| • apply properties of numbers when operating upon expressions and equations<br>• model (with concrete materials and pictorial representations) and express the relationships between arithmetic operations and operations on algebraic expressions and equations<br>• sketch graphs from words, tables, and collected data<br>• identify, generalize, and apply patterns<br>• describe real-world relationships depicted by graphs, tables of values, and written descriptions<br>• interpret solutions to equations based on context<br>• investigate and find the solution to a problem by graphing two linear equations with and without technology<br>• solve equations using graphs<br>• solve linear and simple radical, exponential, and absolute value equations and linear inequalities<br>• explore and describe the dynamics of change depicted in tables and graphs<br>• investigate and make andt4st conjectures concerning the steepness and direction of a line | Investigation and Focuses to have students explore and develop a process by which they can:<br>• develop and equation in the form, $ax + b = cx + d$<br>• solve equations in the form, $ax + b = cx + d$<br>• interpret the solution to an equation in the form $ax + b = cx + d$ to ensure it is reasonable in the original problem | 111<br>113<br>115 |

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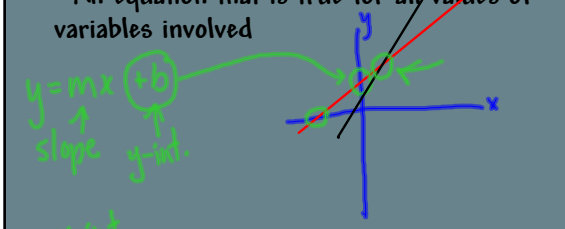
## Terms:

**Intersection Point**

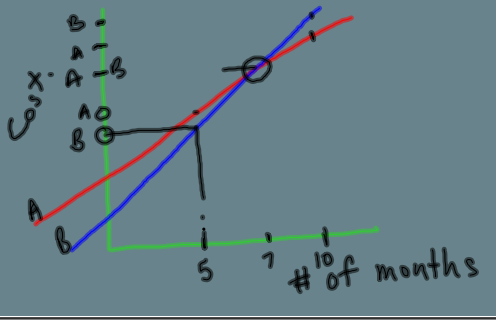
-The point where the graph of 2 equations cross

- **Identity**

-An equation that is true for all values of variables involved




@5 → B @10 → A

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# Investigation 4: Making Decisions (Pg.111)

Two Internet providers have gone into business in your rural area. You receive flyers from them. Your home business needs Internet service and you decide to choose one of the two companies.

Company A - $20.00 per month and $2.00 per hour $y = 20 + 2x$

Company C - $10.00 per month and $2.50 per hour $y = 10 + 2.5x$

For what number of hours of Internet use are the costs the same?

points $(x, y)$ ? T.O.V.

**Purpose**

Choose an Internet provider by developing a strategy that builds upon the skills ou developed in Section 3.2.

## What Skills Have We Developed?

- Creating a Table Of Values $(x, y)$
- Creating a graph from the TOV
- Creating an equation for a situation
- Solving the equation for a situation

| x | $y = 20 + 2x$ | y | $(x, y)$ |
|---|---|---|---|

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Two Internet providers have gone into business in your rural area. You receive flyers from them. Your home business needs Internet service and you decide to choose one of the two companies.

Company A - $20.00 per month and $2.00 per hour

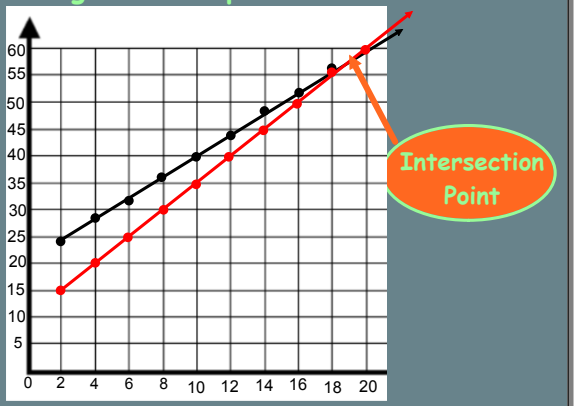
Company C - $10.00 per month and $2.50 per hour

For what number of hours of Internet use are the costs the same?

## Create a table of values for both companies:

| COMPANY A | | COMPANY C | |
|---|---|---|---|
| # of hours (h) | Cost in $ (c) | # of hours (h) | Cost in $ (c) |
| 2 | | 2 | |
| 4 | | 4 | |
| 6 | | 6 | |
| 8 | | 8 | |
| 10 | | 10 | |
| 12 | | 12 | |
| 14 | | 14 | |
| 16 | | 16 | |
| 18 | | 18 | |
| 20 | | 20 | |

## Create a graph showing both companies:

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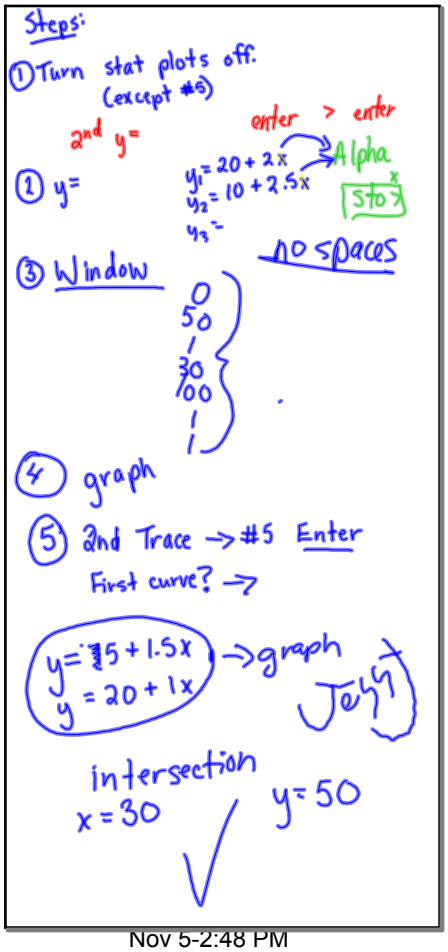


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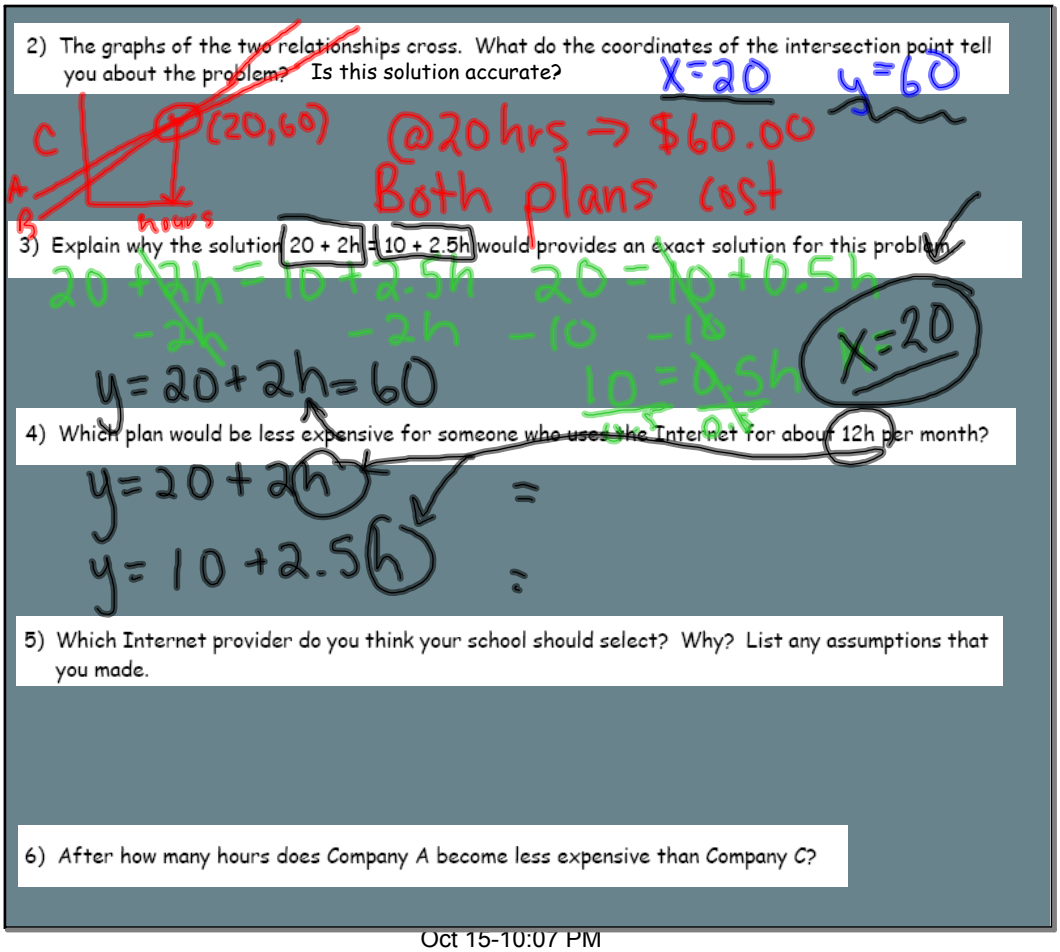


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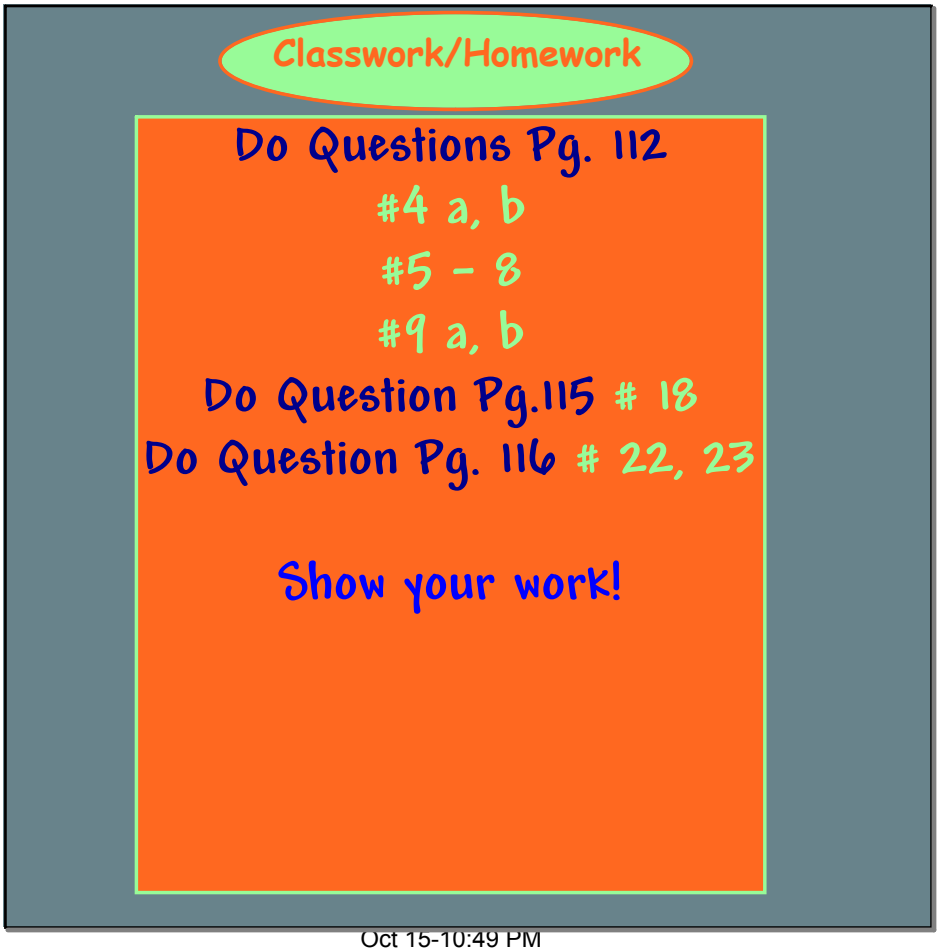


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## Attachments

Equations.doc

Equation Riddles.doc

Solving for an Unknown 1.doc

Solving for an Unknown 2.doc

Word Problems Practice.doc

Writing word problems.doc

Math 10 Review  3.1, 3.2 & 3.3.doc

Section 3.2 & 3.3 Quiz Review.doc